

REMARKS

The Office Action mailed April 23, 2004 has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

No extension of time is believed to be required based upon the filing of this Amendment prior to the deadline of the three-month statutory period (i.e., July 23, 2004). Authorization is granted to charge counsel's Deposit Account No. 01-2300, referencing **Attorney Docket No. 107314-00016**, for any additional fees necessary for entry of this Amendment.

The Abstract has been amended. In addition, claims 1, 2, 4 and 5 have been amended. Applicants submit that the amendments made herein are fully supported in the Specification and the drawings, as originally filed, and therefore no new matter has been introduced. Accordingly, claims 1-6 are pending in the present application and are respectfully submitted for reconsideration.

The Abstract stands objected to because of an informality. The Abstract has accordingly been amended in response to the Examiner's objection and it is submitted that the Abstract, as amended, complies with 37 C.F.R. § 1.72. The objection is respectfully traversed and reconsideration is requested.

Claims 1, 2, 4 and 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Ogata patent (U.S. Patent No. 5,844,603) in view of the Suzuki reference (Japanese Ref. No. 10322684). In making the rejections, the Examiner noted that the Ogata patent "fails to teach image enlarging means for enlarging the image picked up by the imaging means, centered on the motion detection area where an object making abnormal motion exists which has been extracted

by the extracting means and displaying the enlarged image on a display device". The Examiner further noted that the Suzuki reference, however, teaches that it is well known in the art to have such image enlarging means. Claims 1, 2, 4 and 5 have been amended. Dependent claims 2 and 5 depend from independent claims 1 and 4, respectively. The rejections are respectfully traversed and reconsideration is requested.

Independent claim 1, as amended, recites a camera signal processor characterized by comprising motion detection means for dividing an image picked up by imaging means into a plurality of motion detection areas, and detecting the motion pattern of the image for each of the motion detection areas; extracting means for extracting, on the basis of the motion pattern of the image for each of the motion detection areas which has been detected by the motion detection means, the motion detection area where an object making abnormal motion exists; and image enlarging means for enlarging the image picked up by the imaging means, centered on the motion detection area where an object making abnormal motion exists which has been extracted by the extracting means and displaying the enlarged image on a display device.

Independent claim 4, as amended, recites a camera signal processing method characterized by comprising the first step of dividing an image picked up by imaging means into a plurality of motion detection areas, and detecting the motion pattern of the image for each of the motion detection areas; the second step of extracting, on the basis of the motion pattern of the image for each of the motion detection areas which has been detected at the first step, the motion detection area where an object making abnormal motion exists; and the third step of enlarging the image picked up by the imaging means, centered on the motion detection area where an object making abnormal motion exists which has been extracted at the second step and displaying the enlarged image on a display device. It is submitted that the references, either alone

or in alleged combination, fail to disclose or suggest the camera signal processor or the camera signal processing method, as claimed.

Particularly, the Ogata patent discloses an image data processing apparatus and method for detecting changes and abnormal states in an image without comparison with templates. With reference to Fig. 1, the image data processing apparatus comprises an image pickup means (camera) 10, an A/D converting section 21, a sampling pulse generating section 22 and an image memory 23 for continuously receiving an image of a first area to be processed, and for converting the image into a first image data item; processing section 25 for dividing the first image data into a plurality of second image data items corresponding to a plurality of second areas which are smaller than the first area and for performing predetermined processing for each of the second image data items so as to determine an abnormal state in the first area. (col. 2, ls. 20 – 29; col. 4, l. 47 – col. 5, l. 8) The results of processing the divided areas are integrated, and the presence or absence of an abnormal state is checked with respect to the plurality of areas as a whole. (col. 5, ls. 61 – 63)

The Suzuki reference discloses a camera device for detecting an abnormal state of an image and outputting an enlarged image area judged to be abnormal. The camera device consists of, in part, an image pickup part 1 for picking up an image, an image area setting part 4 for extracting image data to be detected, an abnormality detection part 6 for detecting an abnormal state with conditions previously set for the respective image areas, an amplification image setting-out section 7 for setting the image area which is enlarged/displayed with the image area judged to be abnormal as the center, an amplification image setting-out section 8 for setting a system for superimposing the enlarged image with the image-picked up image, an image data read-out section 9 for reading and outputting enlarged image data from an image memory by

enlarged image area data and superimposing the system data of the enlarged image, and an amplification image superposition section 10 for outputting enlarged image data to image data based on the superimposing system. (Abstract; para. [0016])

It is submitted that the Ogata patent and Suzuki reference, either alone or in alleged combination, do not disclose or suggest the camera signal processor and camera signal processing method as claimed in the present invention, particularly, a camera signal processor comprising, in pertinent part, motion detection means for dividing an image picked up by imaging means into a plurality of motion detection areas, and detecting the motion pattern of the image for each of the motion detection areas, and extracting means for extracting, on the basis of the motion pattern of the image for each of the motion detection areas which has been detected by the motion detection means, the motion detection area where an object making abnormal motion exists or the first and second steps of the camera signal processing method, as claimed.

Specifically, with respect to the extracting means of the Ogata patent, the processing section 25 divides an input image into a plurality of areas, each area having a size equal to the other divided areas, with each of the areas subjected to processing for extracting an abnormal state. (col. 5, ls. 9 – 39) An average density value of an image, a dispersion value, and a confusion (complication) using a result of differential binarization may be used as a characteristic amount for which a parameter is preset for each divided area. (col. 5, ls. 51 – 52; col. 5, l. 65 – col. 6, l. 1) An abnormal state is extracted on the basis of time-based changes in the characteristic amount in each of the divided areas, i.e., changes in characteristic amount up to a time point are compared with the parameter supplied to each area. (col. 5, ls. 40 – 43; col. 5, ls. 57 – 61) Such is not equivalent or analogous to the motion detection means and extracting means of amended independent claims 1 and 4. In the present invention, “the motion of the

"image" being detected and extracted is based on "the motion pattern of the image". In contrast, in the Ogata patent, the presence or absence of an abnormal state is determined by a change in a characteristic amount persisting beyond a preset threshold for each divided area instead of motion pattern recognition. (col. 6, ls. 17 – 29; col. 6, l. 53 – col. 7, l. 18) Thus, the Ogata patent does not disclose or suggest the camera signal processor as claimed in the present invention.

Nor does the Suzuki reference disclose or suggest such motion detection means and extracting means as claimed. The Suzuki reference merely discloses that an abnormality decision section 66 carries out a comparison operation of a setup threshold against image data, and judges whether an abnormal condition exists based on an average picture level and a peak level. (para. [0015]) Such is also not equivalent or analogous to the motion detection means and extracting means of amended independent claims 1 and 4.

Nor even if the references were combinable, as suggested, such alleged combination of the references clearly does not disclose or suggest the camera signal processor and camera signal processing method as claimed. Further, there is no suggestion or motivation to combine the Ogata patent and the Suzuki reference that would result in a camera signal processor comprising, in pertinent part, motion detection means for dividing an image picked up by imaging means into a plurality of motion detection areas, and detecting the motion pattern of the image for each of the motion detection areas, and extracting means for extracting, on the basis of the motion pattern of the image for each of the motion detection areas which has been detected by the motion detection means, the motion detection area where an object making abnormal motion exists, as claimed in the present invention. Accordingly, it is submitted that the Ogata patent and

Suzuki reference, either alone or in alleged combination, fail to disclose or suggest the camera signal processor and camera signal processing method as claimed in the present invention.

Dependent claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Ogata patent in view of the Suzuki reference as applied to claim 1 in view of the Matsumura et al. patent (U.S. Patent No. 6,002,428) and in further view of the Shinjo et al. patent (U.S. Patent No. 5,644,372). In making the rejections, the Examiner noted that the Ogata patent in view of the Suzuki reference "fails to teach the center-of-gravity detecting means for extracting, out of groups formed by the group forming means, the group having the largest area, and finding the center of gravity of the extracted group", but that the Matsumura patent teaches that it is well known and used in the art to have such center-of-gravity detecting means. The Examiner further noted that the Ogata patent in view of the Suzuki reference in further view of the Matsumura patent "fails to teach a scaling-up means for scaling up the image picked up by the imaging means, centered on the center of gravity found by the center-of-gravity detecting means, and displaying the scaled-up image on a display device", but that the Shinjo patent teaches that it is well known in the art to have such scaling-up means. The rejections are respectfully traversed and reconsideration is requested.

Dependent claim 3 recites a camera signal processor according to either one of claims 1 and 2, characterized in that the image enlarging means comprises group forming means for grouping, out of the motion detection areas where an object making abnormal motion exists which have been extracted by the extracting means, the areas where an object making abnormal motion exists such that the areas connected to each other form one group; center-of-gravity detecting means for extracting, out of groups formed by the group forming means, the group having the largest area, and finding the center of gravity of the extracted group; and scaling-up

means for scaling up the image picked up by the imaging means, centered on the center of gravity found by the center-of-gravity detecting means, and displaying the scaled-up image on a display device.

Dependent claim 6 recites a camera signal processing method according to either one of claims 4 and 5, characterized in that the third step comprises the fourth step of grouping, out of the motion detection areas where an object making abnormal motion exists which have been extracted at the second step, the areas where an object making abnormal motion exists such that the areas connected to each other form one group; the fifth step of extracting, out of groups formed at the fourth step, the group having the largest area, and finding the center of gravity of the extracted group; and the sixth step of scaling up the image picked up by the imaging means, centered on the center of gravity found at the fifth step, and displaying the scaled-up image on a display device.

The Matsumara et al. patent discloses a motion vector detection circuit for tracking an object on the basis of a specific color where a large block of the same color having a largest area is selected out of a plurality of large blocks by counting the number of detection blocks having the same color label. The motion vector detection circuit includes a CPU 136 that compares the correlation value of each detection block with a predetermined threshold value to determine whether detection blocks are of the same color. The gravity of the block having the largest area is evaluated, and a position data of the gravity of the large block is applied to a motion vector generating circuit 172.

The Shinjo et al. patent discloses enhancing the quality of individual pixels of an LCD device by maintaining a center of gravity of a growing inverted domain at the center of each pixel. Specifically, an inverted domain is grown from the center of the pixel as a domain growth

center by application of a halftone display voltage. As the applied voltage increases, the domain area is enlarged while the center of gravity of the growing domain remains at the center of the pixel.

It is submitted that the Ogata patent, the Suzuki reference, the Matsumara et al. patent and the Shinjo et al. patent, either alone or in alleged combination, fail to disclose or suggest the camera signal processor and method as claimed in the present invention. As acknowledged by the Examiner in the Office Action, the Ogata patent in view of the Suzuki reference does not disclose or suggest the center-of-gravity detecting means and the scaling-up means as claimed. The Shinjo et al. patent merely discloses maintaining a center of gravity at the center of a pixel to enhance the quality of individual pixels of an LCD device, rather than scaling-up means for scaling up an image picked up by imaging means, centered on the center of gravity found by center-of-gravity detecting means, and displaying the scaled-up image on a display device, as claimed in the present invention. Thus, even if the CPU 136 of the motion vector detection circuit of Matsumura et al. were combinable with the other references, as suggested by the Examiner, such alleged combination with the Shinjo et al. patent would clearly not result in the camera signal processor or method, as claimed. Further, there is no suggestion or motivation to combine the references that would result in the claimed camera signal processor and method. Accordingly, it is submitted that the Ogata patent in view of the Suzuki reference as applied to claim 1 in view of the Matsumara et al. patent and in further view of the Shinjo et al. patent fail to disclose or suggest the camera signal processor and method, as claimed.

Based on the foregoing, it is therefore submitted that independent claims 1 and 4 are patentable based on the Ogata patent and Suzuki reference not disclosing or suggesting the camera signal processor or camera signal processing method, as claimed in the present invention,

and are in condition for allowance. Accordingly, based upon the patentability of independent claims 1 and 4, it is further submitted that the dependent claims are also patentable since they differ in scope from their respective parent independent claims. Dependent claims 2 and 5 depend from independent claims 1 and 4, respectively, and are thus limited to additional features of the invention. Therefore, it is respectfully submitted that the dependent claims 2 and 5 are patentable over the Ogata patent and the Suzuki reference for at least the reasons set forth above with respect to independent claims 1 and 4, and are in condition for allowance. Dependent claims 3/1, 3/2, 6/4 and 6/5 also depend from independent claims 1 and 4. Therefore, it is respectfully submitted that the dependent claims 3/1, 3/2, 6/4 and 6/5 are patentable over the Ogata patent and the Suzuki reference in view of Matsumara et al. and in further view of Shinjo et al. for at least the reasons set forth above with respect to independent claims 1 and 4, and further for the reasons as set forth above with respect to dependent claims 3/1, 3/2, 6/4 and 6/5, and are in condition for allowance. Reconsideration is respectfully requested.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicants' undersigned counsel at the telephone number, indicated below, to arrange for an interview to expedite the disposition of this application.

Dated: July 22, 2004

Respectfully submitted,

  
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Application Ser. No.: 09/674,489  
Attorney Docket No.: 107314-00016